



H26 A Retrospective Analysis of Deaths in Harris County, Texas, for the Detection of COVID-19 Prior to March 2020

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Learning Overview: After attending this presentation, attendees will be able to see how a large medical examiner office performed retrospective reviews of autopsy material for the diagnosis of COVID-19 prior to widespread knowledge.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by increasing awareness of COVID-19 prior to widely available Polymerase Chain Reaction (PCR) testing and awareness of previously undetected community spread.

The emergence of SARS-CoV-2 rapidly introduced the world to a novel virus that impacted nearly all aspects of society. Coroner and medical examiner offices were required to rapidly adapt what little that was known about COVID-19 into day-to-day death investigations. Case jurisdiction, scene response, and decedent examination were three of the primary areas that were impacted by COVID-19 and required new interview questions, investigative thought processes, and new precautions. Viral PCR testing for SARS-CoV2 was only developed/made available in Harris County in early March 2020. While new operations were quickly and efficiently put into action for incoming cases as of mid-March of 2020, it is believed that SARS-CoV2 had active community spread prior to March 2020. The symptoms of COVID-19 mimic those of other upper respiratory diseases such as influenza, pneumonia, and gastrointestinal illnesses. So, without awareness of COVID-19, it was possible that a COVID-19-related death could have been missed.

A retrospective case study was performed, which looked at all medicolegal cases from January 1, 2020, to March 23, 2020; There were a total of 1,075 cases from January 1, 2020, to March 23, 2020, that were examined at Harris County Institute of Forensic Sciences (HCIFS). The cause and manner of death for these cases were reviewed. Of the 1,075 cases, multiple cases were eliminated based on an elimination criteria of Manner of Death classified as Homicide, Suicide, or Accident-Motor Vehicle Accident (MVA). Only cases with a Natural or Undetermined manner were further reviewed. The narrative of the HCIFS Investigative Report was assessed and cases where the decedents exhibited Influenza-Like Illness (ILI) symptoms such as fever, cough, nausea, vomiting, etc. leading up to their demise were selected for further evaluation. Cases that were signed out with diseases that appeared similar to COVID-19 (influenza, pneumonia, etc.) were also flagged for review. After these two rounds of elimination, 56 cases were determined to be in need of further investigation. The autopsy reports and histology for all 56 cases are being reviewed, and, if necessary, histologic paraffin blocks will be sent out for viral RNA extraction and testing to detect SARS-CoV2. It is believed that this will help determine whether COVID-19 was actively spreading in the community prior to the ability to test for it using nasopharyngeal swabs.

COVID-19, Retrospective Review, Autopsy Findings